



**U.S. Department of Energy
Technical Qualification Program**

Occupational Safety Qualification Standard

Study Guide

<p>Section 4.0 Management, Assessment, and Oversight</p>
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April 1996



Competency 4.1 Occupational safety personnel shall demonstrate a working level knowledge of the development and management of both the technical and programmatic elements of an occupational safety program.

1. Supporting Knowledge and Skills

- a. Discuss the function of a safety program.
- b. Discuss the general principles of management applicable to the organization of the safety function, safety program planning, safety program evaluation, and communications with labor, management, and the public.
- c. Discuss the role and significance of the following major elements in a successful safety program:
 - Positive management leadership
 - Assignment of safety management responsibilities
 - Formal statement of policy
 - Maintenance of safe working conditions
 - Establishment of control and prevention programs
 - Worksite analysis
 - Training
- d. Discuss the importance of and methods for establishing, updating, and measuring program performance against safety program goals and objectives.
- e. Identify common safety program performance indicators.
- f. Discuss safety program funding and human resource issues that must be considered in both short and long term plans and budgets.
- g. Discuss the role, contents, and significance of a written safety program document.
- h. Discuss the importance of employee participation in the implementation of the safety program and identify potential methods to ensure or encourage involvement.
- i. Identify and discuss the application of criteria in the Environment, Safety and Health Management Plan for occupational safety.



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2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
 - Below are three web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://cted.inel.gov/cted/index.htm	DOE Standards, Guides, and Orders.
OSHA	http://www.osha-slc.gov/	OSHA documents and search engine
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read DOE Order 3790.1B, *Federal Employee Occupational Safety and Health Program*.

EXERCISE 4.1-A Using DOE 3790.1B as a reference, discuss DOE's position on the function of a safety program.

Read DOE Order 5483.1A, *Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned, Contractor-Operated Facilities*.

EXERCISE 4.1-B Discuss the role and significance of the following major elements in a successful safety program:

- Positive management leadership
- Assignment of safety management responsibilities
- Formal statement of policy
- Maintenance of safe working conditions
- Establishment of control and prevention programs
- Worksite analysis
- Training



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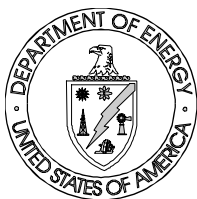
Review DOE Order 3790.1B, *Federal Employee Occupational Safety and Health Program*.

- EXERCISE 4.1-C Discuss the importance of and methods for establishing, updating, and measuring program performance against safety program goals and objectives.
- EXERCISE 4.1-D Using DOE 3790.1B as a reference, discuss the 13 factors that DOE has identified for consideration when doing safety and health evaluations (beyond the detailed safety and health requirements and standards contained in applicable DOE Orders, Occupational Safety and Health Administration (OSHA) standards and regulations, and executive Orders).
- EXERCISE 4.1-E Discuss safety program funding and human resource issues that must be considered in both short- and long-term plans and budgets.

Review *Health and Safety Plan Guidelines*, published by EM-450.

Review 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*.

- EXERCISE 4.1-F Referring to the EM-40 *Health and Safety Plan (HASP) Guidelines* identify the contents of an effective and high-quality safety program document.
- EXERCISE 4.1-G Discuss the importance of employee participation in the implementation of the safety program and identify potential methods to ensure or encourage involvement.
- EXERCISE 4.1-H Using 29 CFR 1910.120 and the *HASP Guidelines*, identify and discuss the application of criteria in the Environment, Safety, and Health Management Plan for occupational safety. A matrix similar to the following may be helpful in completing this exercise.



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Criteria	Application
General Requirements	
Site-Specific Criteria	

3. Summary

An effective and efficient occupational safety program is composed of many diverse elements including both technical and managerial skills and knowledge. Because of the significance of safety in the federal system, many regulations, Orders, guidelines, and other official documents address occupational safety directly or indirectly. Effective management of an occupational safety program requires extensive planning and the involvement of a wide variety of people and positions. The complexity of the issues and the scope of the task requires that a formal, detailed occupational health and safety program be developed to ensure that each of the requirements is adequately addressed.

It is also important that the safety and health program be clearly written. Not only is this a requirement of the Orders and federal regulations, but it serves an important role as an indication of the importance the organization attributes to safety. It demonstrates this commitment to the employees as well as to others that safety is a crucial area of importance to the operation of the organization.

Since it is generally considered impossible to make any given site “safe” from all possible hazards, it is critical that all DOE employees and subcontract employees practice safety. This requires demonstrated management commitment, regular training and retraining, and active employee involvement in the health and safety program.



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Employee participation and responsibility are critical elements of an effective safety program. Employees must be involved in both the planning and the implementation of safety and health programs to assume ownership and responsibility for the program's success. Everyone must be aware that safety is his or her job and that it cannot be delegated.

Health and safety programs must compete for the available funding in any organization's budget. It is important to realize, however, that their funding is not optional at any DOE facility. DOE requires that responsible managers allocate sufficient funds to address the critical safety issues at all sites and facilities.

4. Exercise Solutions

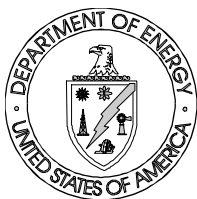
EXERCISE 4.1-A Using DOE Order 3790.1B, discuss DOE's position on the function of a safety program.

ANSWER 4.1-A DOE 3790.1B, 5. "Policy," provides five policy statements on the function of a DOE safety program.

- Provide places and conditions of employment that are as free as possible from recognized hazards that cause or are likely to cause illness or physical harm.
- Ensure that employees and employee representatives shall have the opportunity to participate in the Federal Employee Occupational Safety and Health Program.
- Establish programs in safety and health training for all levels of federal employees.
- Ensure that no federal employee is subject to restraint, interference, coercion, discrimination, or reprisal for filing a report of an unsafe or unhealthful working condition, or other participation regarding the safety and health of federal employees.
- Consider all OSHA and 29 CFR 1960 requirements to be minimum standards for federal employees.

EXERCISE 4.1-B Discuss the role and significance of the following major elements in a successful safety program:

- Positive management leadership
- Assignment of safety management responsibilities
- Formal statement of policy
- Maintenance of safe working conditions

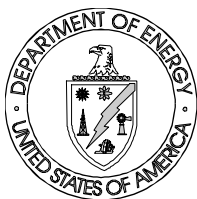


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- Establishment of control and prevention programs
- Worksite analysis
- Training

ANSWER 4.1-B This table provides possible answers to this question. Answers may vary as long as the responses are substantially the same.

Major Elements in a Successful Safety Program	
Element	Role and Significance
Positive management leadership	The success of the Department's Occupational Safety and Health (OSH) program depends upon top line management involvement, which will provide the program with visibility, momentum, a sense of organizational commitment and direction, and reinforcement of established policies, goals, and objectives.
Assignment of safety management responsibilities	<p>DOE and contractor line organizations need to develop and maintain a professional OSH infrastructure by establishing professional qualifications, and requirements and employing well-trained and experienced OSH professionals.</p> <p>Contractor line management should train supervisors to understand the hazards associated with the work performed on their worksites, the potential effects of these hazards on employees, and the supervisor's role in controlling employee exposures to hazards. Because of the supervisor's immediacy to OSH issues, their role is particularly significant.</p>
Formal statement of policy	<p>A formal statement of policy serves two purposes. One is a clear elaboration of expectations for OSH activities at a facility or site. It becomes the foundation document against which the individual policies and procedures are measured.</p> <p>A second purpose is demonstrating management commitment in a formal, easily understood manner.</p>
Maintenance of safe working conditions	Management commitment to effective OSH programs contributes to improved production quality and capacity; lower operating costs; and motivated employees. It is a primary consideration in DOE's commitment to protect the safety of the environment, public, and employees.



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Major Elements in a Successful Safety Program	
Element	Role and Significance
Establishment of control and prevention programs	Because of the changing work environment, it is not sufficient to make a single initial assessment of worksite hazards that will be sufficient indefinitely. The worksite and its hazards must be regularly assessed to identify changes in hazards. Programs must be established that provide checkpoints and regular feedback as to the effectiveness of the existing programs, and any changes in the work environment which might require redesign of existing safety programs.
Worksite analysis	<p>A key element of any effective OSH program is a thorough worksite analysis. DOE and contractor line organizations are required to conduct hazard assessments to identify and evaluate potential hazards. The results of these analyses must then be used to design a workplace free of recognized OSH hazards.</p> <p>Failure to be aware of a hazard because the worksite was not properly analyzed is a sign that OSH policies and/or practices are ineffective. Effective managers actively analyze the work and worksite to anticipate and prevent harmful occurrences.</p>
Training	Lack of or insufficient training is frequently identified as a root cause in accidents and incidents. Sufficient and appropriate training in OSH activities is required both by numerous regulations, (e.g., 5480.20A, 5483.1A) and good management practice.
NOTE: Much of the material in this chart was obtained from DOE 5483.XX, a 2/11/93 draft of a revision to 5483.1A. As such, it does not carry any regulatory requirement, but it does provide a helpful perspective on the goals of DOE OSH programs.	

EXERCISE 4.1-C Discuss the importance of and methods for establishing, updating, and measuring program performance against safety program goals and objectives.



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ANSWER 4.1-C The key to a successful OSH program is continuous improvement through regular feedback and program revision. Setting safety program goals and objectives gives all employees a clear understanding initially of the desired performance and results, but regular assessment of program progress and corrective actions to address identified problems are critical to maintaining the employees' commitment to the program.

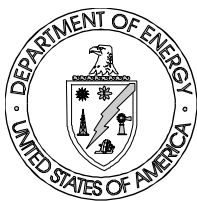
“Periodic Review. The satisfactory control of occupational health hazards must be given continuing attention despite the imposition of control measures. Documented periodic monitoring is essential to assure maintenance of (sic) and shall report to management regarding the continuing adequacy of controls, the need for additional measures, or recommendations for maintenance or reemphasis of administrative controls. Employees shall be given the opportunity to observe the monitoring for toxic materials or harmful physical agents and shall be given access to the results.” DOE Order 3790.1B, VII, 5.(e).

A well-designed OSH program follows the standard good management practices for any program. Typical program management activities include the following:

1. An analysis of the work, environment, staff, and hazards is done
2. The goals and objectives are clearly determined and communicated
3. The processes and methods for achieving the goals and objectives are determined
4. Milestones and checkpoints toward the goals and objectives are set
5. Period measurements are taken of the progress at the milestones and checkpoints and the data are evaluated
6. Necessary corrections are made in the processes and methods based on the evaluation of the performance

EXERCISE 4.1-D Using DOE 3790.1B as a reference, discuss the 13 factors that DOE has identified for consideration when doing safety and health evaluations (beyond the detailed safety and health requirements and standards contained in applicable DOE Orders, Occupational Safety and Health Administration (OSHA) standards and regulations, and executive Orders).

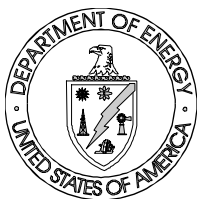
ANSWER 4.1-D DOE identifies 13 factors as significant for doing safety and health evaluations. These are shown in the table below and can be found in



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DOE Order 3790.1B, IX-3, 5.

Factors in Doing Safety and Health Evaluations	
Area	Performance Indicator
Management Involvement and Support	Adequacy and extent of management involvement in the operation of the safety and health program.
Management Directives	Extent to which safety and health directives are complied with and the extent to which and how adequately local policies are written, published, transmitted, kept current, and implemented.
Organization and Administration	Structure and effectiveness of the organization toward ensuring a comprehensive safety and health program, and the determination of the effectiveness of liaison and coordination between organizational components with regard to the safety and health program.
Documentation	Adequacy of documentation covering safety and health activities.
Budgeting and Expenditures	Adequacy of safety and health input to the budget formation and review processes and adequacy of funds to implement the safety and health program.
Staffing	Adequacy in amount and technical skill of staff assigned to carry out the safety and health program.
Training	Adequacy of training, program promotion, and education in the areas of safety and health for all groups of employment. Determination of the adequacy of training records.
Communication and Coordination	Adequacy of information flow on safety and health matters within the organization.
Performance Measurement	Adequacy of a system established to implement DOE accident/incident investigation and reporting requirements. Determination of the adequacy of trend and risk analyses and resulting effort(s) in accident/incident prevention. Adequacy of a system to ensure that claims filed with the Office of Workers' Compensation Programs are properly recorded within the DOE accident/incident reporting system.
Evaluation Programs	Frequency, adequacy, and records of evaluations, including notification of findings with an effective follow-up system.



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Factors in Doing Safety and Health Evaluations	
Area	Performance Indicator
Inspection and Abatement Program	Adequacy of a safety and health inspection program, including the scheduled abatement of deficiencies noted.
Property Management	Adequacy of measures taken to ensure that safety and health requirements are translated into specifications, drawings, procedures, equipment, and instructions.
Employee/Employee Representatives Involvement	Adequacy of program involvement by employee representatives through committee activities, safety and health inspections, access to program information, and the reporting of unsafe and unhealthful working conditions through established procedures.

EXERCISE 4.1-E Discuss safety program funding and human resource issues that must be considered in both short- and long-term plans and budgets.

ANSWER 4.1-E Health and safety programs must compete for the available funding in any organization's budget. It is important to realize, however, that their funding is not optional at any DOE facility. DOE Order 3790.1B requires responsible managers to allocate sufficient funds to address the critical safety issues at all sites and facilities.

“6.a. Director of Administration and Management, . . . shall:

(1) Designate an official with sufficient authority and responsibility to plan for and assure funds for necessary safety and health staff, equipment, materials, and training required. . .

6.c. Heads of Field Elements with Delegated Personnel Authority must . . .:

(1) Designate an official with sufficient authority and responsibility to plan for and assure funds for necessary safety and health staff, equipment, materials, and training required. . .

(6) Ensure that funds sufficient to conduct the program are identified in the budget planning process.” Reference: DOE Order 3790.1B

EXERCISE 4.1-F Referring to the EM-40 *Health and Safety Plan (HASP) Guidelines*



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identify the contents of an effective and high-quality safety program document.

ANSWER 4.1-F DOE EM-40 states that Health and Safety Plans (HASP) should contain the following:

- A clear chain of command for safety and health activities
- Accountability for safety and health performance
- Well-defined headquarters expectations regarding safety and health
- Well-defined task and operational hazards/risks
- Comprehensive hazard prevention and control methods
- Record-keeping requirements to track program progress

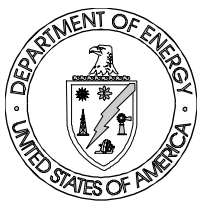
EXERCISE 4.1-G Discuss the importance of employee participation in the implementation of the safety program and identify potential methods to ensure or encourage involvement.

ANSWER 4.1-G Employee “ownership” of health and safety programs helps to secure cooperation and participation in the program. This may be enhanced by using motivational programs, incentive programs, recognition programs, giveaways, and similar means.

EXERCISE 4.1-H Using 29 CFR 1910.120 and the *HASP Guidelines*, identify and discuss the application of criteria in the Environment, Safety, and Health Management Plan for occupational safety. A matrix similar to the following may be helpful in completing this exercise.

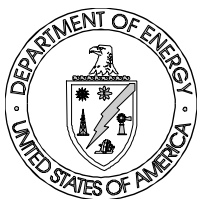
ANSWER 4.1-H Guidance for a safety and health management plan is provided by 29 CFR 1910.120 and the EM-40 *Health and Safety Plan (HASP) Guidelines*. Your responses should be substantially the same for the “Criteria” column in the matrix. Your responses for the “Application” column may vary, but should contain most of the elements shown in the following matrix.

NOTE: Detailed assistance in completing these requirements is provided by the EM-40 *Health and Safety Plan (HASP) Guidelines*.

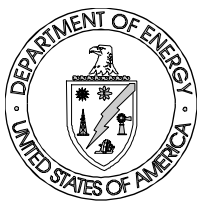


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Application of Criteria for ES&H Plan for Occupational Safety	
Criteria	Application
General Requirements	
Organizational structure	The <i>HASP Guidelines</i> require specific identification of the names and organizational relationships among the DOE, contractor, and subcontractor key personnel onsite. The document provides an example of an organization chart and the appropriate information for, and use of, the chart.
Comprehensive workplan	This is used in conjunction with hazard assessment. It should detail the selection of the operation or job, and the breakdown of the operation or job into constituent tasks. The hazards and hazard controls are then determined for the tasks.
Site-specific safety and health plan	This refers to the more detailed plan for multi-site facilities.
Safety and health training program	Each site is required to have a safety and health training program. Specific requirements for individuals are contained in a variety of OSHA and DOE Orders, CFR, and federal, state, and local codes and standards. The <i>HASP Guidelines</i> provide details about these requirements and their source documents.
Medical surveillance program	Medical surveillance of workers is necessary to protect the health of the worker, establish fitness for duty, and ensure documentation of exposure to hazardous materials.
Standard operating procedures for safety and health	Standard operating procedures for safety and health issues address two issues. The first is demonstration of management commitment to safety and health in the form of detailed procedures to address the major concerns. The second is that workers who use general safe work practices are less likely to be injured or harmed than those who do not use these practices.
General and site-specific program interfaces	In order to ensure adequate coverage of all significant safety and health issues it is necessary to compare the general and site-specific programs to identify gaps and duplication. Of particular concern are the areas where the two programs interface and the opportunity for errors and omissions is greatest.



Application of Criteria for ES&H Plan for Occupational Safety	
Criteria	Application
Site-Specific Criteria	
Safety and health risk/hazard analysis	A safety and health risk/hazard analysis is required for each site task and operation found in the workplan.
Employee training assignments	All employees working onsite are required to receive appropriate safety and health training before beginning their duties. Because the level and content of the training varies depending upon the workers' assignment, it is important that all workers' training requirements be clearly documented and tracked throughout their assignments and updated as necessary.
Personal protective equipment	An effective personal protective equipment (PPE) program is a significant factor in safe-guarding employee health and safety. The <i>HASP Guidelines</i> and 29 CFR 1910.120 provide specific details required in both a general and site-specific PPE program.
Medical surveillance documents	The <i>HASP Guidelines</i> and 29 CFR 1910.120 provide specific requirements for an effective site-specific medical surveillance program. The records generated by this program form a foundation for dealing with long-term health and safety issues, and for intermediate adjustments to the site safety and health plan. It is vital that they cover the appropriate personnel, are accurate, and are maintained in a timely and efficient manner.
Monitoring instrumentation and techniques	<p>This portion of the plan must be based upon all chemical, physical, and radiological hazards identified in the site characterization. At a minimum it must contain the following:</p> <ul style="list-style-type: none"> • Sampling strategy and schedule for personal monitoring, air monitoring, and environmental sampling • Instrumentation and equipment to be used • Calibration and maintenance of instruments and equipment • Quality Assurance (QA)/Quality Control (QC) procedures and analytical methods



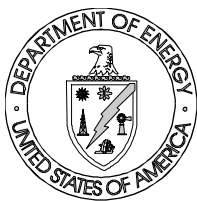
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Application of Criteria for ES&H Plan for Occupational Safety	
Criteria	Application
Site control measures	<p>The site control program is used to control the movement of people and equipment in order to minimize worker exposure to hazardous substances. At a minimum, the site control plan must include the following:</p> <ul style="list-style-type: none"> • A site map • Site work zones • Definition and use of the “buddy system” • Site communication procedures • Safe work practices and/or standard operating procedures (SOP) • Location of the nearest medical assistance
Decontamination procedures	<p>The decontamination elements contained in the site-specific plan must contain the following:</p> <ul style="list-style-type: none"> • Training • Location and layout of decontamination stations and areas • Decontamination methods • Decontamination equipment • SOP to minimize worker contact with contaminants • Procedures for collection, storage, and disposal of materials that have not been completely decontaminated
Emergency response plan	<p>Site management is required to develop and implement an Emergency Response Plan (ERP) if the employees are expected to respond to emergencies at the site. The <i>HASP Guidelines</i> detail the 15 minimum requirements.</p>
Confined space entry	<p>A confined space entry program must contain as minimum the following:</p> <ul style="list-style-type: none"> • Personnel duties and responsibilities • Identification, posting, and evaluation of confined spaces on-site • Hazard controls • Entry permit contents, requirements, and approval • Entry procedures • Lockout/tagout requirements and procedures • Additional safeguards and emergency procedures • Training requirements



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Application of Criteria for ES&H Plan for Occupational Safety	
Criteria	Application
Spill containment	<p>A spill containment program provides the procedures to contain and isolate a hazardous substance spill and minimize worker exposure. As a minimum it must contain the following:</p> <ul style="list-style-type: none">• Initial spill actions and response• Spill cleanup procedures• Organization of the response team• Post-incident review and evaluation

**Competency 4.2 Occupational safety personnel shall demonstrate the ability to perform occupational safety trend analyses.****1. Supporting Knowledge and Skills**

- a. Discuss the key processes used in the trending and analysis of operations and post-operation activities information and its relationship to occupational safety activities.
- b. Using an actual list of performance indicators, determine what type of assessment should be performed and in what areas.
- c. Given a set of incident/occurrence report data for a specified period, analyze the information for safety trends or compliance problems.

2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
 - Below are three web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://cted.inel.gov/cted/index.htm	DOE Standards, Guides, and Orders.
OSHA	http://www.osha-slc.gov/	OSHA documents and search engine
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read paragraph 7 of DOE 5480.26, *Trending and Analysis of Operations Information Using Performance Indicators*, and paragraphs 1 through 6 and Appendices 2 and 5 of DOE-STD-1048-92, *DOE Performance Indicators Guidance Document*.



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- EXERCISE 4.2-A Referring to paragraph 7 of DOE 5480.26, *Trending and Analysis of Operations Information Using Performance Indicators*, how often is the contractor's performance indicator report to be submitted to DOE?
- EXERCISE 4.2-B Referring to Appendix 2 of DOE-STD-1048-92, *DOE Performance Indicators Guidance Document*, which of the required performance indicators relate to occupational safety?
- EXERCISE 4.2-C Referring to paragraph 7 of DOE 5480.26 and paragraph 6 of DOE-STD-1048-92, describe the general responsibilities for facility managers and DOE line management for trending and analyzing performance indicators and other operational information.
- EXERCISE 4.2-D Referring to paragraph 7 of DOE 5480.26 and paragraph 6 and Appendix 5 of DOE-STD-1048-92, describe the process (or methods) used to trend and analyze performance indicators and other operational information.
- EXERCISE 4.2-E With your supervisor, obtain a contractor's performance indicator report for the last quarter and determine for each indicator: (1) whether you need to investigate any identified issues, and (2) what particular approach you will take to investigate these issues or indicators further (e.g., using interviews, observations, or document reviews and walk-downs).
- EXERCISE 4.2-F Using contractor occurrence reports for the past 12 months, analyze and trend key (that you and your supervisor identify) safety performance data, applying the methods shown in Appendix 5 of DOE-STD-1048-92. Show your results to your supervisor.

3. Summary

(From *Fundamentals of Industrial Hygiene*)

The degree of health hazard to an individual arising from exposure to environmental factors or stresses depends on four factors: (1) the nature of the environmental factor or stress, (2) the level of exposure, (3) the duration of exposure, and (4) individual susceptibility. After a list



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of chemicals and physical agents to which employees are exposed has been prepared, it is necessary to determine which of the environmental factors or stresses may result in hazardous exposures and need further evaluation. Valuable information can be obtained by observing the manner in which health hazards are generated, and control measures are used and by determining the number of people involved. The kind of provisions that must be installed to protect against health hazards will vary from plant to plant, from one toxic material to another, and from process to process.

Experience, discussion with others in the field, and a thorough knowledge of the effects of exposure to a particular chemical or physical agent arising out of manufacturing operations are required to properly evaluate the hazards arising out of the industrial environment. This information, coupled with the trending and analysis of critical occupational safety, industrial hygiene, and employee medical data can result in early identification and prevention of serious injuries and illnesses.

The general methodology for trending and analyzing such data combines numerical methods to organize the data with engineering management knowledge and insights concerning the process operations. This approach is outlined in DOE-STD-1048-92, *DOE Performance Indicators Guidance Document*.

4. Exercise Solutions

EXERCISE 4.2-A Referring to paragraph 7 of DOE 5480.26, *Trending and Analysis of Operations Information Using Performance Indicators*, how often is the contractor's performance indicator report to be submitted to DOE?

ANSWER 4.2-A Quarterly.

EXERCISE 4.2-B Referring to Appendix 2 of DOE-STD-1048-92, *DOE Performance Indicators Guidance Document*, which of the required performance indicators relate to occupational safety?

ANSWER 4.2-B (Either answer is correct.)

In a general sense, all relate (or can relate) to occupational safety.

More directly, the personnel safety indicators 1.1 through 1.6, substance abuse incidents (2.5), environment indicator 3.3, and OSH



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noncompliance indicator 4.3.

EXERCISE 4.2-C Referring to paragraph 7 of DOE 5480.26 and paragraph 6 of DOE-STD-1048-92, describe the general responsibilities for facility managers and DOE line management for trending and analyzing performance indicators and other operational information.

ANSWER 4.2-C Facility managers are required to assess their facility operating information for trends and indications of deteriorating or improving conditions, and to identify lessons-learned and good practices in order to prevent problems and improve safety and operations. Similarly, DOE line management is required to trend and analyze operational information to provide feedback to the contractor.

EXERCISE 4.2-D Referring to paragraph 7 of DOE 5480.26 and paragraph 6 and Appendix 5 of DOE-STD-1048-92, describe the process (or methods) used to trend and analyze performance indicators and other operational information.

ANSWER 4.2-D The general methodology for trending and analyzing DOE and contractor performance data combines simple and descriptive statistical methods to organize the data with engineering management knowledge and insights concerning process operations. This approach entails the use of control charts, count charts, X-charts, U-charts, distribution charts, and standard data evaluation and analysis techniques.

EXERCISE 4.2-E With your supervisor, obtain a contractor's performance indicator report for the last quarter and determine for each indicator: (1) whether you need to investigate any identified issues, and (2) what particular approach you will take to investigate these issues or indicators further (e.g., using interviews, observations, or document reviews and walk-downs).



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ANSWER 4.2-E Sample checklist shown here.

Follow-Up Assessment of Contractor Performance Indicators		
Indicator	Investigate? (Y/N)	Approach To Be Used
Collective Radiation Dose		
Skin/Clothing Contaminations		
Internal Contaminations		
Radioactive/Hazardous Material Overexposure		
Lost Work Day Case Rate		
Substance Abuse Incidents		
Environmental Incidents		
OSH Noncompliance		

EXERCISE 4.2-F Using contractor occurrence reports for the past 12 months, analyze and trend key (that you and your supervisor identify) safety performance data, applying the methods shown in Appendix 5 of DOE-STD-1048-92. Show your results to your supervisor.

ANSWER 4.2-F None required.